ratio of 50-60 is reached at an inulin U/P ratio of 150-200. Thus, the concentrating ability for urea is rather poor in the seal. A possible interpretation is that active transport of urea is not very pronounced in the renal tissue of the seal. The effect of apnea upon the renal function and upon the heart was found to depend upon the degree of struggling with which artifical "diving" was accompanied. Apnea not accompanied by struggle caused a slowing of the heart rate but each heart cycle was normal. In apnea accompanied by struggling the T-waves were inverted or isoelectric. When the animal was struggling, (with or without apnea), the maximum urea U/P ratio was decreased. It is not clear to what extent quiet diving affects the glomerular filtration rate.

This work was supported by a grant from the Coastal Plain Heart Association of North Carolina.

1 The work was done during the tenure of an Established Investigatorship of the American Heart Association.

Extra-Renal Salt Excretion in Marine Birds

Knut Schmidt-Nielsen
Duke University

The finding (summer 1956) that the nasal gland, or salt gland, of the head is the major organ of excretion for sodium chloride in cormorants was extended to a number of other species of marine birds. The composition of the secretion was determined in greater detail. The innervation of the gland, and its response to various stimuli were established. A detailed study of the anatomy and histology of the gland was commenced.

The results indicate that the salt gland is universally present and of functional importance in all marine birds. The gland is under parasympathetic control, and is stimulated by osmotic loads, mainly sodium chloride, as it is ingested with food or by drinking of sea water. It is assumed that this stimulus acts via central osmoreceptors. The gland functions only after an osmotic load, and does not secrete in the absence of such load.

Supported by National Institute of Health Grant No. H-2228.

Fetal Thyroid of the Spiny Dogfish, Squalus acanthias

Allyn J. Waterman[1] and J. Wendell Burger[2]
Williams College and Trinity College

Activity of fetal and maternal thyroids was studied by injection of I^{131} into pregnant females ("candle" and late fetal stages), nonpregnant